Patent claims:

1. Wing, especially lifting wing of an aircraft, with changeable profile, which extends in wing chord direction (5) extending essentially in flow direction and perpendicularly thereto in wingspan direction (10), and comprises a first cover skin (55a) and lying opposite thereto a second cover skin (55b), and comprises a leading edge region (11) and a trailing edge region (12) with respect to the wing chord direction (5), as well as a wing tip region (14) at the end of the wing (1) with respect to the wingspan direction (10), characterized by a flexible region (15) arranged close to the wing end, through which the profile of the wing tip region (14) is adjustable in a direction that includes both a component in wing chord direction (5) as well as a component in wingspan direction (10).

2. Wing according to claim 1, characterized in that the flexible region (15) is arranged obliquely relative to the wing chord direction (5).

3. Wing according to claim 1 or 2, characterized in that the flexible region (15) extends from the leading edge region (11) to the trailing edge region (12) of the wing (1).

4. Wing according to claim 1, 2 or 3 characterized in that the leading edge region (11) extends with a positive sweepback

angle to the wing chord direction (5), and that the flexible region (15) is arranged essentially perpendicularly to the leading edge region (11).

5. Wing according to one of the claims 1 to 4, characterized in that, in the flexible region (15) the camber of the wing (1) is adjustable while changing the curvature of the first cover skin (55a) and of the second cover skin (55b).

6. Wing according to claim 5, characterized in that the flexible region (15) comprises several longitudinally extending torsion boxes (53) arranged next to one another, which are formed of the first cover skin (55a), the second cover skin (55b) as well as at least one spar (52) extending in the longitudinal direction of the torsion boxes (53), and are articulately connected with one another in a prescribed degree, and which are torsionally stiff about their longitudinal direction and are changeable in their shape in a direction perpendicular thereto in the sense of a prescribed change of the wing profile, and in that there is provided an adjusting mechanism (60) for the changing of the shape of the torsion boxes (53) and therewith of the wing profile in response to a corresponding control signal.

7. Wing according to claim 6, characterized in that the adjusting mechanism (60) comprises at least one vertebra body (61) with a transmission element (64) that is

connected via a pivot joint (68) with the first cover skin (55a) preferably for compensating the relative motion between the first cover skin (55a) and the vertebra body (61), and with a vertically spaced apart connection location (63) to a drive line (62) that is changeable in its length in response to the control signal, whereby a change of the length of the drive line (62a) causes a rotation of the at least one vertebra body (61) in the sense of a change of the shape of the torsion boxes (53) and therewith of the wing profile.

8. Wing according to claim 7, characterized in that several vertebra bodies (61) arranged one behind another are provided, which are connected respectively with one drive line (62a).

9. Wing according to claim 7 or 8, characterized in that the arrangement of the at least one vertebra (61) and the at least one drive line (62a) is provided within the torsion boxes (53).

10. Wing according to claim 7 or 8, characterized in that the arrangement of the at least one vertebra body (61) and the at least one drive line (62a) is provided outside of the torsion boxes (53).

11. Wing according to one of the claims 7 to 10, characterized in that the pivot joint (68) is embodied as an elastic

joint, by which each transmission element (64) is connected via elastic connections on the one hand with the first cover skin (55a) and with a spar (52).

12. Wing according to one of the claims 1 to 5, characterized in that flexible region (15) comprises one or more box elements (154) elongated in a longitudinal direction, which are jointedly connected on their longitudinal sides in a prescribed degree via joint regions (169) and are provided between the first cover skin (55a) and the second cover skin (55b), whereby the box elements (154) comprise a transmission region (164) extending perpendicularly to their longitudinal direction and connected with the first cover skin (55a), and a connection region (163) spaced apart in vertical direction, and in that there is provided an adjusting mechanism (160) coupled with the connection region (163) of the box elements (154) for the moving of the box elements (154) about the joint regions (169) in the sense of a change of the wing profile in response to a corresponding control signal.

13. Wing according to claim 12, characterized in that the box elements (154) have an essentially triangular basic shape in cross-section, whereby the transmission region (164) is formed by the baseline and the connection region (163) is formed by the corner point of the triangle lying opposite thereto.

14. Wing according to claim 12 or 13, characterized in that the adjusting mechanism (160) comprises a drive line (162a) that is changeable in its length and that is coupled with the connection region (163) of the box elements (154), whereby a change of the length of the drive line (162a) causes a rotation of the at least one box element (154) in the sense of a change of the shape of the wing profile.

15. Wing according to claim 12, 13 or 14, characterized in that there are provided several box elements (154) arranged one behind another, which are respectively coupled with a drive line (162a).

16. Wing according to claim 12, 13, 14 or 15, characterized in that there are provided pivot joints (168) for the compensating of a relative motion between the first cover skin (55a) and the box element (154), via which the transmission region (164) of the box elements (154) is coupled with the first cover skin (55a).

17. Wing according to one of the claims 12 to 16, characterized in that the joint regions (169) and/or the pivot joints (168) are formed by elastic joint elements.

18. Wing according to claim 17, characterized in that the joint regions (169) and/or the pivot joints (168) are formed by flexibly elastic bands (172, 174).

19. Wing according to one of the claims 12 to 18, characterized in that the joint regions (169) and the pivot joints (168) are formed by a common joint.

20. Wing according to claim 19, characterized in that the common joint (168, 169) is formed by flexibly elastic bands (172, 174) that respectively extend in extension of the shanks (154a, 154b) of the triangular box elements (154), are secured thereto at one side, and cross over one another, of which the other side is secured on the first cover skin (55a) of the wing (1).

21. Wing according to claim 20, characterized in that a filler piece (176), especially consisting of an elastic material, is provided in the space bounded by the first cover skin (55a) and the flexibly elastic bands (172, 174) that cross one another.

22. Wing according to one of the claims 12 to 21, characterized in that there is provided a web or spar element (177) extending in the direction from the first cover skin (55a) to the second cover skin (55b) and extending with its longitudinal direction parallel to the longitudinal direction of the box elements (154), which is secured with one side via a first jointed connection (178) on the first cover skin (55a) or near the first cover skin (55a) on the side of the box elements (154), especially on the joint region (169) and/or on the pivot joint (168), and with the

other side lying opposite, via a second jointed connection (179), on the second cover skin (55b).

23. Wing according to claim 22, characterized in that the first jointed connection (178) and/or the second jointed connection (179) is formed by elastic bands.

24. Wing according to one of the claims 14 to 23, characterized in that the drive line (162a) is coupled via an elastic band (164) with the connection region (163) of the box elements (154).

25. Wing according to one of the claims 12 to 24, characterized in that a spacing holder (181; 281) is provided between the first cover skin (55a) and the second cover skin (55b), by means of which the cover skins (55a, 55b) are held at a prescribed spacing distance and simultaneously a relative motion between these is made possible in connection with changing of the wing profile.

26. Wing according to claim 25, characterized in that the spacing holder (181; 281) includes a roll shaped element (182; 282) and a flexible band arrangement (183a, b; 283a, b) for the guiding of the roll shaped element (182; 282) in the sense of a rolling motion of the roll shaped element (182; 282) between the first cover skin (55a) and the second cover skin (55b) in connection with a relative motion between these.

27. Wing according to claim 26, characterized in that the flexible band arrangement (183a, b; 283a, b) includes at least one flexible band guided around the roll shaped element (182; 282) and secured with its ends on the first or the second cover skin (55a, 55b) respectively.

28. Wing according to claim 27, characterized in that the roll shaped element (282) is centrally divided, and in that the flexible band (283a, b) is guided through the middle of the roll shaped element (282) while reversing the wrapping direction, and is guided around this respectively halfway in opposite directions.